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CIRCLE OF THE MECHANIC ARTS.

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ARCHITECTURE.—NO. VIII.

Doric Order.—Of this there are many examples still remaining; some of very high antiquity, and of proportions so dissimilar to the practice of latter times, that one cannot help concluding they were produced before experience had matured the rules of art. In several buildings exhibited in the ruins of Pæstum, Ionia and Athens, the height of the column does not exceed four diameters, or at most four and a half; the low appearance of these in large buildings, must surely convince us, that usefulness was regarded more than elegance of design. Indeed the history of the Doric order may be divided into three epocha. First, when the columns did not exceed four diameters in height, as to the temple called *Thoricion*, ten leagues from Athens. Also to a temple at Corinth, where the columns are only three and a half diameters, and are fluted. To which may be added those remaining at Pæstum, in Italy; where to one temple the columns are four diameters high, to another, about one third less, and to the other about one third more. The second era may be presumed, when the columns had not six diameters in height; as to the Propylea, or the grand entrance into the city of Athens, to the temples of Minerva and Theseus at the same place, which were built in the flourishing time of Pericles, whose columns are only five and a quarter diameters high. Also the more ancient temple of Apollo, where the columns have five diameters, and are smooth or plain; having twenty channels or flutings three inches long in the neck, or top of the column, and as many at the foot, two inches long. The third point of time is when six or more diameters were allowed, as to the temple of Augustus at Athens; or as Stuart on good evidence, called it, "the entrance to a market," where six diameters are used. These are all without bases; in this division must be included the temple of Hercules, at Cora, where the columns have eight and three quarters diameters, and are on bases. Vitruvius allows this to be the most ancient order, and gives the following account of its origin; "Dorus, the son of Helenis and the nymph Optyce, built a temple in the ancient city of Argos, to the goddess Juno, which happened to be of this order, but which then had no regular proportions; it derived its name from the patron of the building. This example, or order, was followed by all the cities of Achaia. Ion, the son of Xuthus afterwards built a temple in Asia, to Apollo Panonius, of this order, and, to render it more agreeable to the eye, he gave six diameters to the column, being guided therein by the examples of nature, which has given to the height of man six times the length of his foot."

Modern practice allows eight diameters, and a base, which was never given to the Doric order by the ancients; this is another mark of its antiquity; for certainly the base is no less proper than elegant. Concerning the flutings, whether they were at first practised or not, is impossible to determine; the remains of this order of the oldest date have flutings. It appears probable, that, when anything like ornament was wished to be added, the fluting of colums early presented itself. There are examples among the antique of the column being squared off, or wrought with pans, as they are called, instead of hollows. Of this kind is the temple of Minerva at Syracuse, of very ancient Doric; the pillars are cut in pans or angles, and are without bases. The temple of Diana at the same place is also in the same style of Doric. To the temple of Hercules at Cora, the columns have the lower third part with pans, and the upper part of the shaft with the regular Doric fluting, which is a singular instance of mixture of style in antique colums. These columns have eight and three quarters diameters for their height, and stand upon bases of a very ungraceful form

The triglyph, a characteristic mark of this order has the appearance of art; the ends of projecting rafters will produce this effect, or near enough, to be improved into what we at present see them; the places assigned them also corroborate this idea. Vitruvius says, that in building, they laid the joists from the interior walls to the exterior parts, and as much of the joists as appeared unhandsome was sawed off, which, not having a pleasing effect, they made tablets like the triglyphs now in use, fixed them against the sawed ends, and painted them in wax, &c. Thus the triglyphs, interjoists, and metope, in Doric work, had their origin from the disposition of the timbers in the roof; afterwards, in other works, some made the rafters that were perpendicularly over the triglyphs to project out, and carved their projecture; hence, as the triglyphs arose from the disposition of the joists, so the mutules under the corona were derived from the projecture of the rafters; wherefore, in stone or marble structures, the mutules were represented declining, in imitation of the rafters; and also, on account of the droppings from the eaves, it is proper they should have such a declination. This also explains the ornament and situation of the guttæ, or drops. The ornaments on the metope, or the space between the triglyphs, may have been originally trophies of the Deity, or implements of sacrifice placed there; the bull's skull is peculiar to the Doric order. M. Winkleman has taken some pains to prove, from a passage in Euripides, that the mutules, or spaces between the triglyphs were open in the most ancient temples. How this may have been, cannot now be determined; those structures which remain have the space filled with masonry.

The modern proportions, from the before cited author, are as follows. The height of the column, including its capital and base, is sixteen modules; the height of the entablature, four modules; which being divided into eight parts, two are for the architrave, three for the frieze, and three for the cornice; the base is one module in height; the capital thirty-two minutes, or a little more.

MR. ANTHONY'S ADDRESS,

Before the Albany Mechanic's Association.

The present is an age of light; an age of colleges and schools; of inventions and discoveries; of steam and electro-magnetism,—but it is not, as it should be, an age of deep thought.

Notwithstanding all that science *has done*, and *is doing*, prejudice is allowed to have too much dominion over us. I grant that many *are willing* to obey the voice of reason, and truth; but it is exceedingly difficult to eradicate preconceived opinions, and establish others totally different from them, in their place. It is no less true that there are many in every community who look upon the efforts that are made to enlighten society with a jealous eye. They affect to consider improvement as innovation,—but in fact, they fear that the present generation shall know more than their sires knew! Themselves are content to *vegetate* as their father's did, and *because* their fathers did; and they would fain have *us* do so too. These may frequently be heard asking the votary of learning "what is all this worth? why spend your time in poring over books, when you should be making money?" And he who loves knowledge may answer,—I am doing as Franklin did; I have a higher object in view than that which you propose."

To furnish a satisfactory answer to the cavils and sneers of those who would stay the progress of mind; to arouse attention to the all-important subject of self-culture; to stimulate exertion in the prosecution of an object which every one capable of understanding will acknowledge to be of paramount importance; and to induce if possible, those who have put their hand to the plough, and are looking back, to balance their good resolutions against imperfect performances; to resolve anew and to *perform* with their might—these are the objects towards which we shall aim in the present discourse.

I shall endeavor to present this subject in as clear a light as possible; and shall therefore consider it under two heads; first, the *motives* for self education; and secondly, the *means* to be employed for the accomplishment of this end.

What is all this worth? What is the *mind* worth? Are its faculties worth cultivating? The organs of the body are. Observe the mother while in the act of teaching her infant's limbs to perform their office. With what interest does she watch the gradual development of their functions! With what pleasure does she notice each progressive step; and how her heart rejoices when she sees the child exercising the full fruition of all its physical energies. Mark the individual as he advances through the several successive stages of life, and you will find him continually making new and varied applications of his bodily powers. Thus during the whole period of his existence he is calling into action, and disciplining his corporeal organs.

Is it so with the mind? Does that receive the same amount of attention? Why does it not? Is it not vastly superior to the body? Is not its range of action infinitely more extended? How immensely important are the subjects which it grasps; and how wonderfully are its faculties strengthened by exercise.

The mind! Who can comprehend it? Who can fathom the depth of its resources?

When we look upon nature around us, and contemplate her mysteries, consider too, how many of them have been unfolded to the gaze of man, we are naturally led to admire the instrument by which so many hidden things have been brought to light. But what, let me ask, is the name of that instrument? *It is Intellect; cultivated, polished intellect.*

And would we hold converse with that mind? Would we trace Talent in all her bright and varied motions? To see how, to her, fact succeeds fact; and thought begets thought; and how all are combined to swell the amount of human knowledge. "Ah!" says Lord Brougham, "it would be no mean reward

for a *life* spent in study and thought, to become acquainted with the prodigious genius of those who have almost exalted man above his destined sphere; and admitted to a fellowship with those loftier minds, to know how it comes to pass, that by universal consent they hold a station apart, rising over all the great teachers of mankind, and spoken of reverently; as if Newton and La Place were not the names of mortal men."

But shall we rest here? Is it enough for us merely to gaze at, and admire those bright stars of intellect? We ought rather to strive for a place among them; and if we cannot shine as luminaries of the *first magnitude* in the intellectual firmament, we may at last aspire to a place in it, humble though it may be, from which our rays may mingle with those brighter ones which are constantly shedding light over an otherwise darkened world.

But I go farther. I verily believe there are some among us endowed with faculties which, if cultivated, would exalt the professors to a place among the great ones of the earth.

No one but the philosopher can have a just idea of the great things for which Providence has fitted his understanding; or the extent to which his faculties may be improved. Therefore let no one say that Heaven has designated for him a position in the world, from which he can never rise.

That the powers of the mind are worth cultivating cannot remain a matter of doubt; and we pass to consider the enjoyments which attend the pursuit of knowledge.

I need not tell you that the title of philosopher is one to which any individual may aspire. No diploma is necessary. The day-laborer who spends his evenings in company with his books, may earn it, and he will have it, too. The *rich nabob* can obtain it by *no easier process.*

But whosoever sets out with a fixed determination to investigate science in its various departments, will find himself surrounded with pleasures, which increase and expand as he proceeds.

Among these, none will be greater than that arising from the consideration that he knows to-day, something of which he was ignorant yesterday. It was never intended that mind should be *dormant*. On the contrary, it is eminently fitted for *action*; not in accordance with fitful, restive impulses, but for *regular constant* action. Its faculties cannot remain operative, and circumstances will determine its motions, whether they be forward, or whether they retrograde. It is evident that while the mind is advancing it is fulfilling its high destiny; and what purer enjoyment can man possess, than that which he may derive from this source? Judicious exercise, then, is salutary; but when in addition to the invigorating effects resulting from a proper use of our powers, we realize a constant accumulation of that good, to the attainment of which our exertions have been directed, we experience a pleasure that no other earthly consideration can bestow.

But there is a class of persons who seem to be controlled by a desire, not so much to improve upon themselves, as to excel others. This may be called *ambition*; or perhaps *emulation*.

Of late much has been said both *for*, and *against* it; but the sum total seems to be, that of itself it is neither good nor bad; but according to its application it may become a benefit or a curse.

Individuals actuated by this principle may experience a "positive pleasure in knowing what others do not know."

Now, although this source of gratification may not be intrinsically so noble as the former one, yet it must not be overlooked, inasmuch as to some it may be an object of the most important consideration. Indeed, we ought not to quarrel with those who are striving to acquire knowledge about *motives*. We should rather encourage them to persevere in their undertaking, since we know that the ingress of intellectual and moral light, is the surest prelude to the banishment of error. In other words, though a man may have no better object in view than that of rising above his fellow, yet if he goes on in the pursuit of knowledge, he will to a certain extent be crowned with success; while at the same time, his more enlightened judgement will be pointing out to him *higher* and *better* motives; so that he will eventually become a *wiser* as well as a more learned man.

But, what is all this worth? Are there no *practical* advantages to be derived from the pursuit of knowledge? Most assuredly.

There is no doubt that a man's first object should be to provide for the subsistence of himself, and family. Now let me ask—will not a vigorous, healthy mind act most efficiently in the attainment of *this object*? Every faculty, with all its extended capacities may be made subservient to this purpose, and almost every thing we are permitted to know may be pressed into the service.

There is scarcely any trade or occupation that is not dependent upon the principles of science, and the man, therefore, who wishes to become truly expert, must devote a portion of his time and attention to them. And this,

First. Because science will enable him to comprehend better the principles upon which he is operating in the pursuit of his daily avocations, and thus to provide against any unforeseen difficulty.

Professional men and mechanics are constantly employing the laws of philosophy, and yet rarely pause to consider the extent of those laws, or the amount of good that might result from a more enlarged application of them.

History has served as a lamp to guide the feet of many of our great men, and yet how few there are who desire to know its truths, or to walk in its light.

Besides this, every one, whether he be a professional man, a mechanic, or a farmer, or a man of leisure, will find objects to be attained and difficulties to be overcome. Every talent, natural or acquired, will frequently be put to the test.

Upon the *handicraftsman*, however, such an emergency falls with the greatest force; and more especially if his attainments have been so limited as to preclude his hopes of success.

"In truth," observes a distinguished Englishman, "though a man be neither mechanic nor peasant, but only one having a pot to boil, he is sure to learn from science lessons that will enable him to cook his morsel better, and both *vary* his dish and improve it."

Second. It will give him an opportunity of inventing new processes, or of improving upon old ones.

The common opinion that the most useful inventions and discoveries have been the result of accident, is erroneous. I am willing to admit that many valuable hints have been derived from casual occurrences, but in almost every case the wisdom of the philosopher has been put in requisition before those *hints* could be turned to any practical account. For example—a German boy is said to have invented the telescope. And how much did he do? Why, he placed two spectacle glasses at a certain distance from each other, and looked through them. Was there any invention in this, or was it mere *boys play?* Was the lad who looked through the two glasses, or was Galileo, who combined them into a telescope, the inventor of that instrument? Let us take a parallel case. Long before Newton or Euler lived, a little urchin was sitting in a room with his grandfather. The old gentleman was busily employed with his books; but the child was amusing himself with a piece of highly polished steel. This he would place in the sun's rays in such a manner as to reflect them into the old gentleman's eyes. The remainder of the story I need not tell; suffice it to say that, according to the logic of some, this boy, at *this time*, discovered that the angles of incidence and reflection are equal; and philosophers who were so very unfortunate as to be born at a later period deserve no credit whatever for unfolding this law. If we could trace the history of all the "*accidental discoveries*" that have ever been made, we should find that nine tenths of them are as much the result of "chance" as those to which we have just alluded, and no more

Third. It will entitle a man to a place among the nobility of the country. "*Among the nobility?*" say you. "We have no nobility—we acknowledge no titles of rank." But I contend that we do; and if you wish to know *who* are our peers, I will answer—our men of intellect and learning.

The following remarks, extracted from an address delivered before the Portland Mechanic Association, by John Neal, Esq., will illustrate this point more fully:

"Who are the privileged class in our country, where all men are equal; where we have no kings, no princes, no nobility, no titles? Look about you, I say again, look about you and judge, every man for himself. Are they not the *better educated*, every where, and the children of the better educated, throughout the land? Go abroad among your neighbors, let all your acquaintance pass in review before you, and see if those who are better off in the world, more influential, and happier than the rest, *other circumstances being equal*, are not all—all, without one exception—better educated than the rest?

It is not the college education that I speak of here; it is not even a school education, obtained before a man sets up for himself; but it is education at large, in the broadest and best sense of the term—the education that any body may give himself, *any body, at any age*. Again, therefore, I do appeal to yourselves to call to mind any of your acquaintance who has got ahead of his brethren, who is looked up to, not only by them but by others, and my life on it that you find him a better educated man, self-educated or otherwise, I care not, better informed about some things which *they* do not consider of importance. I go farther. So perfectly satisfied am I of the truth of this doctrine of the importance of things which the uneducated regard as trivial, that I would have this taught as a fundamental truth, namely: that if two persons were to begin the world to-morrow,—both of the same capacity,—both of the same age and character, having the same friends, the same prospects, and the same health, he who was best acquainted with the multiplication table, would beat the other in the long run. I would have it understood as another fundamental maxim in morals, if not in religion, that every sort of knowledge is of some value to every person, whatever may be his character, station, or prospects. I do not say that it would be of *equal* value to every person, or that every sort of knowledge is alike *necessary*. I merely say that we cannot acquire any useless knowledge."

(To be continued.)

SELF EDUCATION.

Benjamin Franklin was a self made man. So was Benjamin West. The one among the most distinguished philosophers, the other one of the best painters the world ever saw. Each had a good teacher, because each taught himself. Both had a better teacher daily, because both were advancing daily in knowledge and in the art of acquiring it.

Baron Cuvier was also a self made man. He was at all times under a good teacher, because he was always taught by Baron Cuvier. He, more than any other man, perhaps than all other men before him, brought to light the hidden treasures of the earth. He not only examined and arranged the mineral productions of our globe, but ascertained that hundreds, and even thousands of different species of animals, once living and moving in the waters and upon the land, now form rocks, ledges, and even mountains. Cuvier thought, however, that he owed a constant debt of gratitude to his mother for his knowledge, because, when a small child, she encouraged him in Linear Drawing, which was of the utmost service in his pursuits. To the same encouragement the world is, of course, indebted for the knowledge diffused by Cuvier among all nations.

Sir Humphrey Davy, by "*self instruction*" made more brilliant and more important discoveries in chemical science, than any one who preceded or followed him. Farmers, mechanics, housekeepers, and many others, are now enjoying the benefit of his labors.

Elihu Burrit, by self instruction, had acquired at the age of thirty years, fifty languages; and that too, while he was laboring vigorously over the forge and anvil, from six to twelve hours daily.

The late Dr. Bowditch *taught himself*, until he exceeded all who had gone before him in mathematical science.

Roger Sherman, whose name will descend to posterity as one of the ablest statesmen and brightest ornaments of the American congress, *taught himself* while working upon his shoe bench.

George Washington was a self made man. His name will fill all future ages with reverence.

Hosts of others, who in former ages moved the intellectual and moral world, also those who now move it, first moved and elevated themselves. Such must be the fact in all future ages.

Every child is his *own teacher*. He teaches himself things; and every thing coming under his observation, animals, vegetables, minerals, tools and operations of farmers, mechanics, and housekeepers, science and art. He teaches himself by seeing, hearing, tasting, smelling, feeling, talking, handling, using and comparing things, and their operations with each other; also cause with effect. Every child of common talents learns a language before he is three or four years of age. Many thousand children, now in our country, not over five years, speak fluently two languages, the English and German. When taught, or attempted to be taught, in school, they are frequently engaged three or six months, and even a year or more, in

learning the alphabet, and are yet unsuccessful. Thousands and hundreds of thousands, now in our country, who have professedly studied, from two to five years with grammars and teachers, the "Art of speaking and writing correctly," neither speak nor write any more correctly than those around them, who never got a lesson or saw a grammar. Is the defect in the pupil or in the modes of teaching? An answer to this question will be attempted in the future numbers of the Self Cultivator. The modes will be pointed out, by which adults, no less than children, can *teach themselves*. And not only teach themselves, but by a course of self instruction, secure their highest enjoyment, and certain respectability and usefulness. Hints, suggestions and plans will also be thrown out, for the benefit of parents, especially mothers; also for teachers, as aids in enlisting the feelings for promoting the improvement of their children and pupils, especially in aiding the improvement of others.—*Holbrook's Self Cultivator.*

THE SCHOOLMASTER.

BY J. G. WHITLER.

Jeremiah Paul was a short round personage, with a quick, (I had almost said a spiteful) little grey eye, a bald head in front and a short stiffner behind. He was a wonderful man to look at, and his history no less than his person. At one period of it he was the village schoolmaster—a rare pedagogue and a learned being. 'Tis said he was not only familiar with Dilworth's spelling book and the Psalter but also with such mathematical problems as are comprehended in the elementary principles of Pike's Arithmetic. It may readily be supposed that a rife and rare man would not be suffered long to remain in obscurity. His talents were not of an order to "blush unseen" and accordingly in his 40th year, he was honored with the office and enriched with the emoluments appertaining to no less a dignity than a justice of the peace. But we are getting ahead of our story, and with the reader's permission we will go back a few years and introduce to him the wife of master Paul. She too was an uncommon character—a good natured, handsome romp—who used to attend school on purpose (to use her own phrase) "to plague master Jerry." And verily she was a plague? She used to bounce in and out whenever she pleased, she pinched the boys, inked the faces of the girls—and finally, to such a pitch did her audacity arrive, that she presumed to lay hands on the nicely powdered cue of the dominie himself.

Jeremiah was leaning over the desk in a musing attitude, engaged in a profound mathematical calculation respecting the probable value of the tenant of his landlord's pig-sty, when this outrage took place. He had already placed the subject in half a dozen different attitudes before his minds eye, and was just on the point of committing his lucubrations to the fragment of a slate upon which his elbow was resting, when a vigorous jerk of the hairy appendage of his pericranium started him bolt up in an instant, and drew from him a cry not unlike that of the animal which was the subject of his scientific cogitations.

Jeremiah did not swear; he was a church going pedagogue; but his countenance actually blackened with rage and anguish, as he gazed hurriedly and sternly around him; and the ill-suppressed laughter of his disciples added not a little to his chagrin.

"Who—who—who—who! I say—"He could articulate no more. He was choaked with passion.

"That are great ugly girl, there, who pinches me so," said a little ragged urchin with a streaked and dirty face.

Jeremiah confronted the fair delinquent; but it was plain from his manner that he had much rather undertaken the correction of the whole school beside than that of the incorrigible offender in question. His interrogating glance was met by a look, in which it would be difficult to say whether good nature or impudence predominated.

"Did you meddle with my cue?" said the dominie, but his voice trembled, his situation was peculiarly awkward.

"I—I—what do you suppose I want of your cue?" and a queer smile played along her mouth, for a pretty one she had, and what is still worse, the dominie himself thought so—Jeremiah saw that he was about to lose his authority; hemmed twice, he shook his head at the rogues that were laughing immoderately at their master's perplexities, and reaching his hand to his ferrule, he said, "give me your hand, miss." His heart misgave him as he spoke. The fair white hand was instantly proffered, and as gentle too, as that of a modern belle at a cotillion party. Jeremiah took it—it was a pretty hand, and then her face—there was something in its expression that seldom failed to disarm the pedagogue's anger. He looked first at her hand and then at her face, so expressive of a roguish confidence—then at his ferrule, a rude heavy instrument of torture, altogether unfit to hold companionship with the soft, fair hand, held in durance before him. Never, in the annals of his brief authority had Jeremiah Paul experienced such perplexity. He lifted his right hand two or three several times, and as often with drew it.

"You will not strike me?" said the girl.

There was an artless confidence in these words, and the tone in which they were uttered, that went to the heart of the pedagogue. Like Mark Antony before the beautiful Cleopatra, or the fierce leader of the Volsci before his own Virginia, the dominie relented.

"If I pardon you for this offence will you conduct yourself more prudently hereafter."

"I hope I shall," said the hopeful young lady; and the master evinced his affectionate solicitude for the welfare of his pupil by pressing her hand he had imprisoned, and the fair owner expressed her gratitude for such condescension by returning the pressure.

They were married just six months afterwards. So much for lenity in school discipline.

APHORISMS OF FUSELI.

Some enter the gates of art with golden keys, and take their seats with dignity among the demigods of fame; some burst the door and leap into the niche with savage power; thousands consume their time in clinking useless keys, and aiming feeble pushes against the inexorable doors.

Heaven and Earth, advantages and obstacles, conspire to educate genius.

Reality teems with disappointment for him whose sources of enjoyment spring in the Elyseum of fancy.

Deserve, but expect not to be praised by your contemporaries, for any excellence which they may be jealous of being allowed to possess themselves; leave the dispensation of justice to posterity.

Beauty alone fades to insipidity and like possession cloys.

All actions and attitudes of children are graceful, because they are the luxurient and immediate offspring of the moment, divested of affectation, and free from all pretence.

Ask not—where is fancy bred? in the heart? in the head? how begot? how nourished? The critic who enquires whether in the madness of Lear, grief for the loss of empire, or the resentment of filial gratitude preponderated—and he who doubts whether it be within the limits of art to embody the beings of fancy, agitate different questions, but of equal futility.

Genius may adopt but never steals. An adopted idea or figure in the works of genius will be a foil or companion; but an idea of genius borrrowed by mediocrity scorns the base alliance and crushes all its mean associates—it is the cyclops by which the pigmy measured his own littleness,—"or hangs like a giant's robe upon a dwarfish thief."

Glitter is the refuge of the mean.

THREE SUNS AT A TIME.

A gentleman at Pleasant Hill, Maryland, writes to the Editors of the Baltimore American that at about half past 11 o'clock on the 29th ult, he saw the wonderful appearance of *three suns* in the heavens. The wind had been rather strong from the west all the night previous and continued to blow in the same direction at the time of the phenomenon, which the writer thus describes:—

"The true sun was near the meridian, and the two parhelia or mock suns were very bright and distinct, one on the east and the other on the west of the true sun, and intersected by a halo surrounding the sun; with an imaginary circle parallel to the horizon and passing through the true sun.

The mock suns were, as well as the halo, colored like a rainbow, and whitish torwards the sun. Each mock sun had a streak or tail of light diverging from it in opposition to the true sun. This strange appearance contiued for about half an hour after we first saw it.

The sky was of a dark blue, approaching to lead color, with passing clouds occasionally veiling the phenomenon from the view.

This extraordinary phenomenon was witnessed by some of our neighbors also, and was the most remarkable spectacle I have ever witnessed.

Percival, in his Wonders of the World, page 386, notices a similar occurrence as having been seen in "Lyndon, in the county of Rutland, on the 22d of Oct. 1581, at eleven in the morning," but which phenomenon was accompanied by "an arc of a curiously inverted rainbow higher in the heavens and about the middle of the distance between the top of the halo and the vortex." He says "this phenomenon was seen on the following day, and again on the 26th."

SOCIAL AGITATION.—If you look over the face of society the first indication that meets you is *commotion*. You see continually, and in every thing, restless activity—intolerance of repose. There is every where a moving to and fro—every where a busy spirit, and an earnest effort. The law of the race is action; the result of the law, progress. The great feature of the age is the intense developement of this law, the mighty unfolding of its result. The agitation is broad and deep. Its spring is the mind and heart of the multitude. The movements are many, and, to the eye of the man unskilled, heterogeneous and hostile. He sees only collisions; no uniform tendency, no features in common, no similarity of final results. The activities are numerous, but he who looks not thoughtfully at them, and into them, will see only cross-purposes. He will hear in the contacts of the parties and individuals—in the conflict of principles—only the discordant sounds. The harmony of the under-tones are not for him.

This commotion, generated in the great deep of the social life, has also its superficial perturbation—its agitation at the surface. The worldling perceives the ebullition, but not fathoming the causes judges untruly, and cannot predict results. The philosopher throws out his sounding line, penetrates the bosom of the perturbed ocean, and seeks an anchoring ground. The wise man essays to find in every thing, a *bottom*—a foundation. Amid the moving elements he seizes on the fixed, the firm. He would have a place to rest on, a starting point for speculation. Then, with a true eye and just comparison, he reads the phenomena of his times. The ever-changing he interprets by the unmoved, the evanescent by the eternal.

Meet occupation it were for him of comprehensive thought to traverse the planet through that which has been, and that which is, to scan the progress of his race, to apprehend the inward—the soul's beauty, mystery, power. The mental vision, impatient of the present, outruns it. Intellect, borrowing the wings of imagination, contemns the known and the finite, stretches forward to the future, the unknown, upwards towards the infinite. *Emerson.*

SONG.

The following exquisite song by Dr. Shaw was written some fifty years ago. Waller or Sedley might have been proud of it. The last line of the first stanzas is worthy of "Glorious Will" himself.

Who has robb'd the ocean cave,
To tinge thy lips with coral hue?
Who from India's distant wave,
For thee, those pearly treasures drew?
Stole the morning of thine eye?

Thousand charms, thy form to deck,
From sea, and earth, and air are torn;
Roses blo m upon thy cheek,
On thy breath their fragrance borne.
Guard thy bosom from the day,
Lest thy snows should melt away.

But one charm remains behind,
Which mute earth can ne'er impart;
Nor in ocean wilt thou find,
Nor in the circling air a heart:
Fairest, wouldst thou perfect be,
Take, O take that heart from me.

KNOWLEDGE FOR THE PEOPLE.

BY JOHN TIMBS.

MECHANICS.

Why may a printing press be said to do the work of fifty men?

Because a solitary workman, with his screw or other engine, can press a sheet of paper against types so as to take off a clear impression; to do which without the press, the direct push of fifty men would be insufficient; and these fifty men would be idle and superfluous, except just at the instant of pressing, which recurs only now and then. This, and the two other preceding illustrations, are almost literally from Dr. Arnott's works, in which the importance of having correct notions on the subject of the simple machines, or mechanical powers, is illustrated by many other familiar examples.

Why is the pulley an advantageous machine?

Because, in such a construction, it is evident that the weight (let it be supposed ten pounds) is equally supported by each end of the rope, and that a man holding up one end, only bears half of it, or five pounds; but to raise the weight one foot, he must draw up the two feet of rope; therefore, with the pulley, he lifts five pounds two feet, where he would have to lift ten pounds one foot without the pulley.

Why is the pulley on ship-board called a block?

Because of the block or wooden mass which surrounds the wheel or wheels of the pulley. Hence the machinery for making these pullies is called *block machinery*. Of that at Portsmouth, invented by Brunel, there is a set of magnificent models in the possesion of the Navy Board. They consist of eight separate machines, which work in succession, so as to begin and finish off a two-sheaved block four inches in length.

Mr. Faraday, in a lecture at the Royal Institution in 1829, stated generally, that the block machinery of Portsmouth, by adjustments, could manufacture blocks of one hundred different sizes; could, with thirty men, make one hundred per hour; and, from the time of its completion in 1801-5, to that day, had required no repairs from Maudslay, the original manufacturer. The total cost was £43,000, and the saving per annum, in time of war, was £25,000, after allowing interest for capital, and paying the expense of all repairs.

Why is a chair or bucket, attached to one end of a rope which is carried over a fixed pulley, used as a fire-escape?

Because a person, by laying hold of the rope on the other side, may, at will, descend to a depth equal to half of the entire length of the rope, by continually yielding rope on the one side, and depressing the bucket or chain by his weight on the other. In this case the pulley must be attached to some part of the building, or it is recommended that each chamber-floor of a dwelling-house should have a staple fixed near the exterior of a window, to which staple the pulley may be attached by a hook. This is, perhaps, the simplest fire-escape yet proposed, and we need scarcely add, the simpler the means the more likely is it to succeed in extreme danger.

Why is the friction greater between pieces of the same substance, than between different substances, with dissimilar grains?

Because, it is supposed, of the roughness, or little projections in the former, mutually fitting each other, as the teeth of similar saws would.

"But for friction," observes Dr. Arnott, "men walking on the ground or pavement would always be as if walking on ice; and our rivers, that now flow so calmly, would all be frightful torrents."

Why does the friction of various woods against each other vary?

Because of their different degrees of hardness; the soft woods in general giving more resistance than the hard woods; thus, yellow deal affords the greatest, and red teak the least friction. Soft metals also produce greater friction, under similar circumstances, than those which are hard.—*G. Rennie.*

Why is the friction of surfaces, when first brought into contact, often greater than after their attrition has been continued a certain time?

Because the smoother the surfaces are the less will be the friction, and that process has a tendency to remove those minute asperities and projections on which the friction depends. But this has a limit, and after a certain degree of attrition the friction ceases to decrease.

Why does smearing the surfaces with unctous matter diminish the friction?

Because it fills up the cavities between the minute projections which produce the friction.

Why has plumbago, or black lead, been substituted for oil in clocks and chronometers?

Because, when mixed with spirit, it readily adheres to the surface of a steel pivot, as well as to the inside of the hole in which it runs, so that the rubbing surfaces are no longer one metal upon another, but plumbago upon plumbago. These surfaces, by their mutual action, speedily acquire a polish inferior only to that of the diamond, and then the retardation of the machine from friction is reduced to almost nothing, and wear and tear from this cause is totally prevented.

Why are jewelled holes injurious to the pivots of watches and chronometers?

Because, sooner or later, however perfect the polishing may be, the hard substance of the jewel grinds and cuts the steel pivot, and the metallic particles clog the oil.

Why is peculiar metal requisite for pivot-holes?

Because it must preserve the oil in a fluid state, have little friction with the steel pivot, and be in a degree softer than the pivot, for it is of less consequence that the hole be worn than the pivot. Brass is objectionable, on account of its liability to rust, and gold is too soft for the purpose. Now, an alloy possessing the above requisite has lately been discovered by Mr. Bennet, watchmaker, of Holborn. It consists of pure gold, silver, copper, and palladium, and its small expense, compared with that of jewels, is not its least recommendation.

Why is a hollow tube of metal stronger than the same quantity of metal as a solid rod?

Because its substance, standing further from the centre, resists with a larger lever. Hence, pillars of cast iron are generally made hollow, that they may have strength, with as little metal as possible. Masts and yards for ships have been made hollow, in accordance with the same principle.

Why does a plank bend and break more readily than a beam, and a beam resting on its edges, bear a greater weight than if resting on its side?

Because the resisting lever is smaller in proportion as the beam is thinner. Where a single beam cannot be found deep enough to have the strength required in any particular case, as for supporting the roof of a house, several beams are joined together, and in a great variety of ways, as is seen in house-rafters, &c. which, although consisting of three or more pieces, may be considered as one very broad beam, with those parts cut out that do not contribute much to the strength.—*Arnott.*

Why is a beam, when bent by its weight in the middle, very liable to break?

Because the destroying force acts by the long lever, reaching from the end of the beam to the centre, and the resting force or strength acts only by the short lever, from the side to the centre; while only a little of the substance of the beam on the other side is allowed to resist at all. This last circumstance is so remarkable, that the scratch of a pin on the under side of a plank, resting as here supposed, will sometimes suffice to begin the fracture.—*Arnott.*

Why is a suspension bridge more economical than an ordinary, or insistent bridge?

Because a suspension-bridge varies its curve so as to adapt it to any variation or partial excess in its load, in consequence of which, the strength of the chains may, with great precision, be adjusted to any required strain, and no more: while, in insistent bridges, the liability of the arch to a fatal derangement of its form by partial or excessive pressure, requires an enormous increase of weight and strength, beyond what is requisite for the mere support of its load, supposing it to be uniformly distributed.—*Ainger.*

STEAM NAVIGATION.—It is remarkable that this science, did not for many years after its invention and application, make such progress as one would conceive its high merits und advantages entitled it to. It was not until the year 1838 that the Navy of England possessed a single steam-vessel, and in 1835 we had only twenty-one, of the aggregate of 3000 horse-power. From that date this species of force has multiplied greatly, and now amounts to nearly eighty, under the pendant of 11,000 or 12,000 horse-power. France has done her best to keep pace with us, having between forty and fifty steam-vessels afloat and building, but none equipped of more than 220 horse-power. By arming her packets she makes considerable display; but her resources for increasing this force on emergency are feeble as compared with our own, for the mercantile steam tonnage of the United Kingdom, progressing as it is in a prodigious ratio, presents the most stupenduous elements of naval power,(by giving facility of operations) that the world has ever witnessed. We recollect when the expedition for the attack of Copenhagen was projected, in 1807—the completest and best expedition that ever England sent forth—although preparations were commenced in March, it was not until so late in the season as the 26th of July, that the first division of the fleet sailed from Yarmouth Roads, leaving but little time to execute the objects of the campaign before the winter set in. Now England at this moment possesses such an amount of steam tonnage, (according to the last official returns published, 810 vessels, 157,840 tons 63,250 horse power,) that a portion of it could convey the troops, with all the usual appendages, and tow a squadron of ships-of-war to the scene of action, in less than one quarter of the time occupied in the former expedition, should circumstances ever render it necessary for us to occupy the island of Zealand, or any post in the Baltic. The fact is, that steam navigation, not only as directly applied to vessels-of-war, but in aid of combined expeditions for sudden descents upon different points, enables the country possessing it in the greatest force to harrass an enemy's coast with a small but well appointed army, and to carry destruction to every town and village within a dozen miles of the sea, unles they are regularly fortified and garrisoned, or covered by large bodies of troops. It is stated by an old author, that "in the year 1647 the Dutch with a fleet and but four thousand men on board, alarmed the whole coast of France, and obliged the French king to keep near ten thousand men on the maritime coast, as not knowing where they would fix."

If such was the case with vessels when movements were dependent on winds and tides, and whose operations were under such circumstances necessarily slow, how much more so it will be with the aid of steam, when, by means of vessels of light draught, heavily armed, not a boat will be permitted to pass out of gunshot of the shore, nor a harbor left open for egress or ingress any day in the year.—*London Naval and Military Gazette.*

ALBANY, SATURDAY, MARCH 4, 1843.

☞ Having succeeded in getting at least a partial report of the subscribers who paid Bisbee, a number whose papers were stopt because there was no money credit to them, will again receive them to the amount of their payments, according to his list. They will understand at once, no doubt, the embarrassments under which we have labored in this matter, and make some allowances therefor

☞ We have received the excellent report of the commissioner of patents, and some other favors from Mr Ellsworth. We have been remiss in acknowledging them, intending to have made extracts and remarks upon them before this. Mr. E. will accept our thanks for his attention.

PROF. EMMONS' LECTURE.—This lecture delivered before the association on Monday evening, was listened to with attention by a respectable audience. The mechanics do not turn out so numerous as they should on these occasions. The lectures are free to the public, and ought to engage the attention of every mechanic, especially. Our limits do not allow us to give these lectures in full, even if they could be procured for publication; but we propose to give a part of that read by Mr. Anthony some weeks since, which we have neglected to notice sooner on that account. The subject chosen by Prof. Emmons was handled with ability, and rendered more interesting by experiment.

AMERICAN CANNON.

"HORRID!—The New York papers say that while the ordnance corps at Fort Monroe were engaged in target firing, one of the cannon, an 18 pounder, burst and a fragment struck Sergeant Cunningham and completely cut him in two in the middle, propelling his head and shoulders against Capt. Huger (the officer commanding) with such violence as to knock him down senseless. A Lieuteanant and five or six men were also knocked down by the concussion, but not injured."

We have somewhere seen it stated, that in the engagements on the lakes during the last war, more Americans were killed by the bursting of their own guns, than by the balls of the enemy. We are accustomed to ridicule the clumsy artillery of the *celestials*, and at the same time our guns continue to destroy the men who work them. Humanity demands that the patriotism of our brave men shall not be called to encounter their own weapons, and that they be spared from destruction by such base metal. Is it not time to enquire why so many defective guns are found in use, and whether it is not possible to construct them in such a manner as to obviate this difficulty? Has the attention of any of our ingenious mechanics been directed to this subject? We believe that propositions have been made to the proper officers, for the construction of guns from wrought iron, that shall be proof against the evil, but from some cause or other, the suggestion has not been encouraged. There is apt to be a lack of attention to such matters, with men who hold their places securely for indefinite time; they are liable to be overcautious about adopting any new contrivances and fail to give new propositions a fair trial,—forgetting that we arrive at perfection by experiment. Few of those whose place it is to handle guns are aware that frequent firing weakens the metal, and that after a cetain number of discharges, a gun is no longer safe; hence the accidents that occur. The piece is used without suspicion, until some devoted being is sent out of the world with its last voice. This is a common occurrence, and yet excites no enquiry into its cause; but is passed over as an *accident*—an *effect* without a *cause!* The guns in our navy are continued in use until they burst, and there is reason to believe that those which are now employed on some of our men-of-war are entirely unsafe.

THE ARTS IN CHINA.

Some of the most important arts of the present day are supposed to have had their origin in China. For the people of that country may claim the invention of printing, of gunpowder, and of the magnetic compass. It is doubted whether the art of printing was derived by the Europeans from the Chinese, though it was unquestionably in use among them, in the same imperfect state as at present, before its application or discovery in Germany. The Chinese mode of printing is so entirely different from ours, that it scarcely deserves the name; but aside from their own pretensions, it may be presumed to have been practised in the tenth century, or five hundred years before Guttenberg and Faust applied themselves to its improvement.

The labors of the silk-worm were undoubtedly first rendered available by the Chinese, of whom the Macedonian Greeks procured the fabric which was brought overland. Their title to the first manufacture of porcelain also, is believed never to have been disputed.

They claim the use of gunpowder at a very remote date; but its application was made wholly to fireworks, in which they still excel; their unwarlike propensities having never suggested the use of guns. There is no very good reason to suppose that Swartz, or any other European, acquired a knowledge of the art of making powder from this distant country, but that it was a genuine invention.

Of the use of the compass, or a knowledge of the property of loadstone in communicating polarity to iron, there is abundant evidence that they were many centuries in advance of the rest of the world. It is explicitly noticed in a Chinese dictionary of the year 121 of our era; and a hundred years later, the use of the compass is distinctly recorded. The invention of the compass, or its first use in Europe, was about the year 1300; and its invention has been ascribed to various individuals and countries.

These useful discoveries, or some of them, are of very little use in the hands of the Chinese, who have made but little progress towards perfecting them. Porcelain, in which they most excelled, is now surpassed by the English, since the ingenious improvements introduced into its manufacture by Wedgewood. In all the rest they have been left far behind.

THE AMERICAN MECHANIC.

We were actuated by the best motives in writing the obituary of this paper a couple of weeks ince; but it seems to have the nine lives of a cat, and we suppose Mr. *Death* will be the *death* of us, for disposing of him in the way we did. In fact he has intimated that he shall give us a wolloping for that deed. We were led into the error which we committed, by receiving the *Mechanic and Farmer* at the same time that we missed his; nor were we more surprised than rejoiced to meet with his paper again in a new form, and considerably improved, after an absence of some weeks. We want a dozen of this class of papers in every state, and each with a dozen resolute men to stir up the mechanics to patronise them. But we repeat the melancholy fact, that no one of all that have been published at different times, has ever got a decent support. The great mass of the mechanics seem to be extremely shy of them; the time does not seem to have arrived for the complete organization of mechanics as a class, for their mutual benefit.

ANCIENT NEWS.

The celebration of marriages in churches was first ordained by pope Innocent III. A. D. 1200; before this time the only ceremony was that of a man's leading his bride home to his house.

Du Chatlin relates that in his days, dogs and cats were eaten at Paris as they now are in China; indeed, Sir Joseph Banks and Dr. Solander affirm, that dogs flesh is the sweetest imaginable. At Rome, camel's heels were the choicest tit-bit for an epicure's tooth. Whale's tongues ranked among the delicacies feasted on in the middle century by Europeans. The Caffre eats his lion for food, and the traveller Bruce among them ate his lion steak with gusto. At Rio Janeiro, an ordinary dish is a monkey pie; and the head of the ape is left to appear above the crust for ornament, in the style of the feet in our pigeon pies.

The Cristian era was first used in counting time, at Rome, in 527: adopted in France in 750; in Spain 1340; and in Portugal in 1410. The early Christians dated from the accession of Dioclesian.

The Prussians gave names to every day in the month, just as we give them to the days of the week.

Maximin, emperor of Rome, was the son of a shepherd of Thrace. His stature, it is said was 8 feet, and his strength before a chariot equal to that of two horses. He was the first emperor that obtained the purple by the sole authority of the army.

Spectacles were invented, as Manni informs us, by a Florentine named Salvino degl'Armati, who died in 1317.

The first circulating library was that established at Cæsarea, by St. Pamphilius, who died 309. He was a man of great learning, who established a library containing 30,000 volumes. His collection was composed principally of religious works, and his object was the promotion of religion. Many of the volumns were transcribed by his own hand.

EGYPT AND MEHEMET ALI.

One of the most extraordinary men of the age is the present govenor of Egypt: He is a native of Macedonia, and is now 73 years of age. He was an orphan in the humblest circumstances, when the govenor of Cavala gave him a common educa-

tion, and afterwards an office and a rich wife. Reading and writing he acquired after he became a pasha, and was indebted to a French merchant for some inculcations which have been of great advantage to him and the world, in the way of religious and political toleration. He was appointed pasha of Egypt—by the sultan of Turkey in 1806, at the solicitations of the ulemas and sheiks, and has had the sagacity to observe the superiority of European principles of government, and the courage and adroitness to adopt them successfully in Egypt. Under his enlightened though despotic sway, that antient country is rapidly acquiring wealth, and importance among the nations of the earth. She supports a population of upwards of 3,000,000; provides for a large standing army, at one time 150,000; 16,000 sailors and 20,000 youths in her establishments for public education, destined for different branches of the public service; 60,000 in the arsenal, manufacturers, &c; 10,000 engaged in buildings and public works in the towns and provinces; 6,000 different government employées. Of the rest 800,000 may be calculated as tradesmen and people employed in cities, towns, &c., the surplus are the mass devoted to agriculture, to which the pasha has devoted much attention, particularly to the culture of cotton. The marine academy at Alexandria has 854 student, all Arabs, who are educated for officers of the fleet. We believe that Mehemet is principally indebted to Frenchmen for his teachers in the different departments for civil and military instruction. The arts and sciences, though rude in comparision with our own, have made great progress under his government. The canal connecting Cairo with Alexandria was completed by him; olive and mulbery trees, hitherto unknown in Egypt, were planted, sugar refineries, saltpetre manufactories, and common foundries established; telegraphs and congreve rockets brought into use, the races of domestic animals improved; Europeans protected and rewarded, and learned travellers encouraged. The prostrate energies of a long enslaved people are in a measure recovering under his iron rule, for impartial justice is administered, judicious courts and a good police established; tortures and other barbarous punishments are done away; instruction is encouraged, ignorant prejudices against the arts and learning of Europe removed; European manufactures and machinery introduced, and many other important reforms effected, far more complete, and directed by a keener sagacity and with a steadier purpose than those attempted by the sultan Mahmood in Turkey. It is true the difficulties of his situation have obliged him to resort to two violent expedients, an enormous taxation and an expensive conscription. Recent travellers, while they laud his enterprise are constrained to acknowledge the bondage of the people. Will the national grandeur compensate for the groans of the oppressed, by which it is attained.

STATE PRISON REPORT.

Mr. Pentz from the committee on State prisons, introduced a report and bill last week for the employment of convicts at mining. We have not been able to get a copy of it, but understand that it recommends the purchase of two mines north of Albany, and the appropriation of five thousand dollars for the purchase of a steam engine to be used in the works by way of experiment.

PUNISHMENT FOR DEBT.

We have read the report of the committee to which was referred petitions from several counties for the abolishment of all laws for the collection of debts. Funny fellows must those petitioners have been, and resolved not to be behind their age, in procuring the largest liberty for the largest number—an age that will be known for the spirit of *abolishment* which pervades it—the abolishment of all old fashioned usages and laws! If efforts are made to do away with severe penalties for the most revolting crimes, why not for the fashionable one of debt? Why should the *liberal*, and *free-hearted* and *generous* man, who has consumed his own substance, and that of a score of wealthy friends, in keeping up a splendid establishment, be subject to the constable's annoyance, when all is gone, and the matter can't be helped! No, no; let us have laws at once for the punishment of the creditor, instead of the debtor. The mechanic, for instance, who has involved himself in building the stately mansion of the gentleman bankrupt, instead of being allowed to collect his debt should be hung up on the first apple tree by the road side, and buried where two roads meet, with a stake driven through his coffin! Seriously, we suspect that the petitioners were disposed to be a little ironical with the fathers of the commonwealth, who gravely refused their petition, and there is no hope this year for *gentlemen* debtors who can't pay their bills.

ASSOCIATION—FOURRIERISM.

We find that the principles of this sect are spreading far and wide, that they pervade more or less every city, if not every community, and that much inquiry is made in relation to their tenets. As they claim to be the friends of the working man, and that their principal object is his advancement, we have promised to admit a few articles on the subject, and leave it open to controversy, if any one sees fit to gainsay what may appear. We cannot, however, allow of lengthy discussions. *Information* is what we are interested in disseminating on all topics, and if any good can come out of this matter, it is well enough that we should know it. We have in a former number expressed opinions averse to the system. Let us see if we were mistaken.

SYNOPSIS OF PATENTS.

An improvement in the shoemakers' paring knife; Isaac S. Pendergast, Barnstead, Belknap county, New Hampshire.

The patentee says:—"I do not claim to be the first to have constructed knives for paring the soles of shoes with fenders, or guides, to prevent the knife from cutting the upper leather, but what I do claim is the combining with the blade, of the knife, a shield, or cap, in the manner described, viz: by forming the cap with a straight shank, flat upon one side, that it may rest upon the blade, and inserting the end of the same into the socket by the side of the blade, as described; by means of which arrangement, I am enabled to give greater strength to the blade, and at the same time protect the upper leather from being injured."

An improvement in the form of Spikes and Nails; William Ballard, New York city.

This improvement in spikes, or nails, consists in making offsets, or indentations, on the opposite sides of, or around, their shank, which offsets, or indentations, are to be in such form as not to cut, or tear, the wood, as is the case with those which have projecting points, or serrated edges, formed upon them, by means of a cold chisel, or by some analogous means, in the manner which has been frequently resorted to. These spikes are also provided with a secondary head below the main head, but of less size, over wich the wood will close, and thus make it adhere more firmly.

Claim.—"What I claim as constituting my invention, and desire to secure by letters patent, is the forming of spikes, or nails, with offsets, or indentations, which offsets, are without sharp, or cutting, edges, so that when driven they shall not injure the wood, but shall hold firmly, by the collapsing of the wood upon them. I also claim the forming of the secondary head, for the purpose, and in the manner, set forth."

An improvement in the method of Cutting Leather for Making Horse Collars; Thomas Parkinson, Sparta, Livingston county, New York.

Claim.—"What I claim as new, and desire to secure by letters patent, is the cutting of the leather which is to constitute the covering of the collar, to a pattern substantially preserving in all variations of size, the relative proportions of the respective parts, as made known."

An improvement in self-setting Saw Mill Dogs; Linus Yale, Newport, Herkimer county New York.

The bale of the improved dog is jointed to the upper part of a sliding nut, which is made in two parts, an upper and a lower plate, bolted together. These two plates at their junction embrace two ways on which they slide. The screw that passes through this nut has on its outer end, beyond the end of the head block, a ratchet wheel permanently attached to it, and outside of this a hand lever, with a hand to catch into the notches of the ratchet wheel, for the purpose of turning the screw to set the log; and outside of the said hand lever, and turning freely on the stem of the screw, is an elbow-lever, one arm of which, by means of a pin projecting from its side, acts upon the hand lever, and thus upon the screw and dog, and the other strikes against a pin attached to the floor, as the carriage reaches the end of its course, by which the whole is put in motion, and the log set for the next cut.

Claim.—"What I claim as my invention, and desire to secure by letters patent, is not the principle of the screw, hand lever, notched wheel, or iron band, as others of a differen form have been used; but what I do claim is, first, the nut in combination with the wrought iron dog, as herein described. Second, the self-setting lever in combination with the hand lever, notched wheel, and screw for the purpose, and in the manner, specified."

INTELLIGENCE.

Elijah White, who went out as U.S. agent to Oregon, took with him a large party of emigrants, writes under date of the 17th, that his party increased to 112—although they had lost two, one by sickness and the other by accident. They started with nineteen wagons and their journey had been slow and tedious; but they had passed two-thirds of the way, and were in excellent health and good spirits. A favorable opportunity for emigration will occur in April, through the aid of Mr. Fitspatrick at Independence. He offers to pilot a party over the mountains from that place. Mr. White advises those who intend to go, to prepare light, strong wagons, and to take no loading except cooking utensils, and provisions for four months. Mules are preferable to horses. He says no doubt exists as to the ultimate success of the colony.—*Roch. Republican.*

The Northampton Courier says that Mr. Oliver Warner, of Hadley, harvested the past season, from eighten acres, part meadow land, twenty-one hundred and sixty-one bushels of corn.

The Cooper's shop of Mr. William Patterson, in Baltimore, one of the most extensive in that city, with

a very valuable stock of tools, &c. was burned on saturday morning. The loss is about $1,500 on which $1,000 was insured.

RAILROAD FROM BOSTON TO BUFFALO.—The completion of this great work at a cost of 16 millions of dollars, at a period of unexampled financial embarrassment, exhibits the persevering spirit which characterizes the people of this country, when once fully engaged in any scheme of aggrandizement. The following table shows the length of each section of the road, the cost per mile, and the total amount of expenditures.

Sections.	*Length.*	*Cost pr. m.*	*Total.*
Boston and Worcester,	44¼	$61,080	$1,934,931
Worcester & W. Stock.	117	42,220	5,235,025
W. Stock. & Albany,	33¼	42,220	1,412,440
Boston to Albany,	200		$8,582,456
Mohawk and Hudson,	16	62,750	1,100,000
Utica & Schenectady,	78	24,342	1,901,735
Syracuse and Utica,	53	19,850	1,011,000
Auburn and Syracuse,	26	23,346	630,000
Auburn and Rochester,	78	19,237	1,500,000
Rochester and Batavia,	32	12,500	400,000
Batavia and Buffalo,	44	11,600	500,000
Albany to Buffalo,	327		7,042,785
	200		8,582,856
Total,	527		$15,625,641

The steamer Sandusky, with the entire of her furniture, &c, was destroyed by fire on Thursday last. The engine was saved without much injury. Loss $15,000 to $20,000.

One of the grain lofts of Mr. J. Vosburgh, at Stuyvesant landing, gave way on Tuesday, and about 4,000 bushels of grain was percipitated to the ground. A horse standing under the shed over which the loft was constructed, was crushed to death.

In consequence of the recent inventions in the business of making cut nails from American iron, nails of excellent quality, it is said, are already selling at less than four cents a pound.

London covers a surface of thirty-two square miles, thickly planted with buildings, mostly three, four and five stories high.

Among the Mexicans it is the fashion to inoculate themselves with the poison of the rattlesnake, which renders them safe from the bite of all venomous animals.

The Kennebec Journal says it has evidence, under the signature of Rev. S. M. Haggett, of Monhegan, that a woman in Bristol, (Me.) has fasted forty days and forty nights and is now in good health.

Dr. Feuchtwanger of N. York denies that German silver is poisonous in it its nature and adds that it will bear the test of acids equally as well as silver itself.

The white pine is the palm tree of the north. In some places they grow to an immense magnitude, and are well calculated to make the mast of some tall admiral. Cox, in his 'Adventures on the Columbia River,' relates that at the fort near the mouth of the stream he measured a white pine tree which was forty six feet in circumference. The trunk measured about one hundred and fifty feet from the branches, and the whole height was no less than *three hundred feet!* This tree was called by the traders, '*Roi de pins.*' King of Pines. Mr. Cox afterwards saw one of greater dimension, the circumference of whose trunk was *fifty seven feet*, and the height to the first branch *two hundred and sixteen feet.*

A letter from Guatamula, Central America, dated 20th October, 1742, published in the 'Diario del Gobierno," announced the assasination of Gen. Morazan, for a long time President of Central America, and a very superior man.

There are now daily taken into the city of New York, upon the N.Y. and Erie railroad, 6,000 quarts of milk. Arrangements are being made for the disposal of 20,000 quarts next season. It is sold, pure, for four cents per quart. This is a great reduction from old prices—a saving on this article alone of half a million a year to the residents of the city.

A large wooden factory in Cambridgeport, Mass. was burned on Thursday morning. It was occupied as a door, sash and blind making establishment, a wood turner's shop, a mill, a marble factory, &c. and belonged to Messrs. Hubby & Markham. The loss must have been heavy, but its amount was not ascertained.

Manufactories in New England are engaged in making chintzes highly creditable to the skill of the American artist. They are said to equal the best French goods of the same kind, in taste of design, strength of texture and color, and are sold at the low price of 12¼ cents per yard, the usual cost of French goods of similar quality, being 37½ per yard.

Upwards of eighty whales were driven on shore, during a recent gale, in Scapa Bay, Orkney Islands. They were sold by auction, and the proceeds, amounting to about twelve hundred dollars, distributed amongst the poor of the neighborhood.

The mechanics' association at Marshall, Michigan, lately discussed the question, "ought Gen. Jackson's fine to be refunded?" to which "*Mechanics, Workingmen* and the citizens generally" were invited to attend. We fear if the association does not direct its attention to subjects more appropriate to its sphere, it will be a long time before a very great improvement will be effected there, either in science or practical mechanics.

The Penitentiary of Missouri has been leased for ten years, for the sum of fifty thousand dollars, the lessees binding themselves to employ the convicts in the manufacture of hempen articles and tobacco entirely.

A mechanic Association has been organized at Thomaston, Me. The following is the list of officers. Rufus C. Counce, President; Edward C. Tilson, Vice President; Geo. A. Starr Secretary; Roland Jacobs, Jr. Treasurer; Rufus H. Counce and Charles G. Smith, Directors.

BUSINESS NOTICES.

☞ All letters and communications intended for this paper should be *post paid to secure attention.*

Terms for vol. 2.—To clubs of 20 or more, having the paper sent in one package, $1 each per annum in advance.

To clubs of not less than 5, sent as above, $1.25 each, in advance.

Single subscribers $1.50, in advance.

Members of the state and county or town associations, subscribing through the secretary, are emitted to the paper at $1 per annum, in advance.

All papers discontinued at the expiration of the time paid for, unless previously renewed.

BINDING.—Subscribers wanting their volumes bound, can have them done in any style and at reasonable prices, by leaving them at this office.

Several volumes of the Mechanic left to be bound some time since are now ready for delivery. The owners are requested to call for them.

To Printers.—FOR SALE CHEAP, a Fount of second hand Pica, about 200 lbs., in good order. Also a quantity of Leads, of different lengths, as good as new. J. MUNSELL.

PRINTING,

IN

ALL ITS DIFFERENT BRANCHES,

SUCH AS

BOOKS, PAMPHLETS, CARDS, CIRCULARS, BILLS, &C.,

Neatly and Expeditiously Executed at the Lowest Prices,

BY

J. MUNSELL,

At the Office of the MECHANIC, No 58 State street, ALBANY.

WOOD ENGRAVING.

N. ORR, (late pupil to J. H. Hall,) is now prepared to execute any orders in the above business, which he may be favored with, and respectfully solicits a share of patronage.

Room No 6, 3d floor, Exchange.

Having made arrangements with Mr. N. Orr, to do my wood engraving, I recommend him to the public as one who understands his business and will doubtless give satisfaction.

JOHN H. HALL.

Albany, Feb. 4th, 1843.

LEATHER, OIL, AND FINDING STORE,

No. 18 Hudson Street.

J. HOCHSTRASSER,

Will continue the above business at his old stand, and having made arrangements with manufacturers of Leather and Morocco in the cities of NEW-YORK, PHILADELPHIA, and ALBANY, and having in his employ first rate workmen, he is enabled to supply his customers with all the articles in his line on the most reasonable terms, at *Wholesale* or *Retail*, the following are included in his assortment: Oak and Hemlock Harness, Bridle, Collar, Horse, Trunk, Valise and Skirting Leather; Hog Skins, Philadelphia Russet Bridle, do. Facing Skins, do. Lining Hides, do. Top Hides, Patent Leather, Couch Roans, Neats-Foot and Liver Oil, Currier's Tools, Oak Sole Leather, Hemlock do., Wax and Grain Upper Leather, do. Calf Skins, Keen's Philadelphia do., Seal and Kip Skins, Splits and Welt Leather, Cordovan, Red, Green, White and Yellow Linings, Goat and Sheep Dusting Skins, White Alum Dressed Linings, Dressed and Undressed Morocco, Colored Goat and Sheep Skins, English Shoe Thread of all numbers, India Rubber and Patent Cloth, Apron Skins, Stock Binding, &c.

N. B. An assortment of SHOE MAKER'S FINDINGS will be kept on hand.

Also, *Roller Skins, Engine Hose, Band, Picker, String*, and *Patent Leather*, on hand and made to order. *Albany, 1-41.*

To Cabinet-Makers and Upholsterers.

DANIEL FRY, No 49 State street, *Importer of Cutlery and Hardware*, keeps constantly on hand a good assortment of HAIR SEATING and CURLED HAIR, together with a complete assortment of *Cabinet Makers' Hardware* which is offered for sale low for cash or approved credit.

FIRE ENGINES!!

THE subscribers are manufacturing at Waterford, on an extensive scale, Fire Engines of various patterns, to suit purchasers, and they do not hesitate to recommend their Engines as decidedly superior to any now in use.

They manufacture the common Piston Engine, to work with chains or connecting rods, which they have improved in the construction of the brakes and the application of the power, so as to give them a decided advantage over those now in use. They also manufacture Rogers' Patent Balance Fire Engine, which has always been proved to be of *superior* power to all others.

Prices at the Factory, in complete order for use:

Those designed

For 40 men,	largest	Philadelphia	size or	11 inch chambers,	$850
" 28 "	"	Albany	"	9 1-4 "	700
" 22 "	"	Common	"	7 "	600
" 16 "	"	N. York city	"	6 1-2 "	500
" 12 "	"	Small	"	5 1-2 "	450

These prices are one hundred dollars below what engines have formerly been sold for, but they are reduced to suit the times.

The above prices can be reduced $50, by dispensing with the tower and goose neck and passing the water through the forward end of the machine. The *utility* of such an engine is fully equal to any other form, but its appearance is not quite so good. They also manufacture Factory Engines and Forcing Pumps of all sizes; Suction and Leading Hose to order, both rivetted and sewed, of the best quality.

They have been in the business 8 years, and might furnish many testimonials of good workmanship, &c., but as purchasers are supposed to prefer judging for themselves, the subscribers will furnish an engine where desired, and if on trial it is not fully equal in *all* respects to the *best* engines now in use, they will take it away without charge. Having an unlimited water power located at the head of sloop navigation on the Hudson river, and at the junction of the Champlain and Erie canal, with a rail road connecting east with Boston and west with Buffalo, our facilities and arrangements for manufacturing are such that orders can be filled at any season of the year, and with the greatest promptness and despatch at the lowest rates.

L. BUTTON & Co.,
Waterford, Saratoga Co., N.Y.

SLEIGHING SONG.

BY JAS. T. FIELDS.

O swift we go o'er the flecey snow,
When moonbeams sparkle round;
When hoofs keep time to mu-ic's chime,
As merrily on we bound

On a winter's night, when hearts are light,
And health is on the wind,
We loose the rein, and sweep the plain,
And leave our care- behind.

With a laugh and song, we glide along
Across the fleeting snow;
With friends beside, how swift we ride
On the beautiful track below.

O! the raging sea has joy for me,
When gale and tempest roar:
But give me the speed of a flaming steed,
And I'll ask for the waves no more!

THE VATICAN.—This magnificent palace in Rome, is said to consist of seven thousand rooms. It is advantageouly situated on an eminence, one of the seven hills on which ancient Rome was built. The parts the most admired, are the grand staircase, the Pope's apartments; and above all, the Vatican Library, so beautiful a fabric, that it is said it will admit of no improvement, and also the richest in the world, both in printed books and manuscripts.

A GOOD ONE.—Capt. Parrot was telling Mrs. Frink of his escape from the alligator. "Wasn't he a dreadful looking creature?" inquired the lady. "Why, ma'am, I can't say his features were regularly beautiful, but there was so much openness when he smiled."

A BEAUTIFUL REPLY.—A married woman of the Shawnee Indians made the following beautiful reply to a man whom she met in the woods, and who implored her to love and look on him: "Oulamou, my husband," said she, "is ever before my eyes, and hinders me from seeing you."

SCRAPS.

Geniuses make bad husbands and bad wives, and when two geniuses come together in marriage, it is like the meeting of two electric clouds, which discharge their thunder at each other. No genius should ever get married.

A well dressed young gentleman at a ball, in whisking about the room, run his head against a young lady. He began to apologise. "Not a word sir," cried she, "it is not hard enough to hurt any body."

Uncle Jo, said an observing little boy, our folks always put up the window when the room is filled with smoke, and the wind always blows in so as to prevent the smoke from going that way; now where does the smoke go? It goes into the *people's eyes*, was uncle Jo's philosophic answer.

Non-committal.—Mrs. Slang, what is your opinion of Mr. Smith?

Well, Mr. Snacks, I declare I don't hardly know what to think of Mr. Smith You know I never talk about my neighbors—but as to Mr. Smith, sometimes I think, and then I'm not so sarting; but raly I believe he'll turn out to be just such a sort of a man as I've always thought he would. Now, mind if he don't.

There is a man in Woonsocket who feels *so big* that he takes off his hat when the clouds are sailing through the heavens, lest they should knock it off.

Never punish a girl for being a romp but thank heaven, who has given her health and spirits to be one. 'Tis better to be a romp, than to have a distorted spine, or hectic cheek.

An old fashioned chap in Charlestown has used up three sides of leather in *strapping* his children

The poorest of all family goods; are indolent females. If a wife knew nothing of the duties beyond the parlor or the boudoir, she is a dangerous partner in these times of pecuniary uncertainty.

Almanac for March.

New moon 1st day. 1h. 6m. morn.
First Qr. 9th day, 4h. 54m. morn.
Full moon 16th day, 1h. 6m. morn.
Last Qr. 22d day, 5h. 54m. aft.
New moon 30th day, 7h. 2m. aft.

D's Mo	D's Wk	Sun rise.	Sun sets	L'n. rises.	Equ. time.	Moon r. & s.	Moon south.	
1	We	6 25	5 32	11 4	*add*	*sets.*	*aft.*	♓
2	Th	6 27	5 33	11 6	12 30	7 21	0 53	
3	Fri	6 25	5 35	11 '0	12 18	8 20	1 34	♈
4	Sat	6 24	5 36	11 12	12 5	9 21	2 16	
5	*A*	6 22	5 38	11 '3	11 51	10 24	3 1	♉
6	Mo	6 21	5 39	11 18	11 37	11 25	3 45	
7	Tu	6 19	5 41	11 22	11 23	*morn.*	4 35	
8	We	6 18	5 42	11 24	11 8	0 22	5 27	♊
9	Th	6 17	5 43	11 26	10 53	1 21	6 20	
10	Fri	6 15	5 45	11 30	10 38	2 13	7 15	♋
11	Sat	6 14	5 46	11 32	10 22	3 0	8 12	
12	*A*	6 12	5 48	11 36	10 6	3 41	9 7	
13	Mo	6 11	5 49	11 38	9 49	4 16	10 1	♌
14	Tu	6 9	5 51	11 42	9 33	4 48	10 55	
15	We	6 8	5 52	11 44	9 16	5 18	11 49	♍
16	Th	6 6	5 54	11 48	8 58	*rises.*	*morn.*	
17	Fri	6 5	5 55	11 50	8 41	8 16	0 41	♎
18	Sat	6 3	5 57	11 54	8 23	9 36	1 40	
19	*A*	6 2	5 58	11 56	8 5	10 51	2 36	♏
20	Mo	6 0	6 0	12 0	7 47	*morn.*	3 36	
21	Tu	5 59	6 1	12 2	7 29	0 6	4 35	♐
22	We	5 57	6 3	12 6	7 11	1 2	5 34	
23	Th	5 56	6 4	12 8	6 52	1 51	6 29	♑
24	Fri	5 54	6 6	12 12	6 34	2 33	7 21	
25	Sat	5 53	6 7	12 14	6 15	3 5	8 9	♒
26	*A*	5 51	6 9	12 18	5 57	3 35	8 54	
27	Mo	5 50	6 10	12 20	5 39	4 0	9 37	
28	Tu	5 48	6 12	12 24	5 20	4 24	10 18	♓
29	We	5 47	6 13	12 26	5 12	4 47	11 1	
30	Th	5 46	6 15	12 30	4 53	*sets.*	11 39	
31	Fri	5 44	6 16	12 32	4 38	7 22	*aft.*	♈

SPRING begins March 21st, 1h. 16m. morn.
SUMMER begins June 21st, 10h. 19m. eve.
AUTUMN begins Sept. 23d, 0h. 36m. eve.
WINTER begins Dec. 22d, 6h. 4m. morn.

FIXED AND MOVEABLE FESTIVALS.

Epiphany, January 6th.
Septuagesima Sunday, Feb. 12th.
Sexagesima Sunday, Feb. 19th
Quinquagesima Sunday, Feb. 26th.
Ash Wednesday, March 1st.
Quadragesima Sunday, April 2d.
Palm Sunday, April 9th.
Good Friday, April 14th.
Easter Sunday, April 16th.
Low Sunday, April 23d.
Rogation Sunday, May 21st.
Ascension Day, May 25th.
Whit Sunday, June 4th.
Trinity Sunday, June 11th.
St. John Baptist's day, June 24th.
St. Michael's day, Sept. 29th.
Advent Sunday, December 3d.

ENGLISH COINS.

	Dolls.	cts.	mills.
Farthing,	0	0	4½
Penny,	0	1	8½
Grout	0	7	4
Shilling,	0	22	2½
Crown,	1	11	1½
Sovereign,	4	84½	
Guinea,	4	66	6½
Pound,	4	44	4

FRENCH COINS.

Franc,	0	18	7½
Five ranc,	0	93	7
Crown,	1	10	0
Louis d'or,	4	44	4½

PATENT AGENCY AND MECHANICAL ENGINEERING, *Office on F street, between 7th and 8th streets, opposite the Patent Office, Washington City, D. C.*—The subscriber has resigned his situation in the patent office (where he for some time superintended the restoration of patents destroyed by fire in 1836) to devote himself to the preparation of specifications and drawings, and all matters connected with the obtaining of patents for useful inventions either in this country or Europe. His experience in theoretical and practical mechanics, together with an intimate knowledge of the progress of the useful arts and manufactures, at home and abroad, will enable him to judge of the novelty and utility of inventions submitted to his examination; and as patents are not granted, under the existing patent laws, when the alleged inventions are wanting in novelty, or contravene the established laws of science, he will be able to furnish all the information necessary to avoid the expense of making application for patents which could not be granted

Having established a foreign correspondence, he will be able to secure patents in Great Britain, France, and other parts of the continent, or furnish information, and prepare all the necessary papers for that purpose.

A model for a machine or apparatus, or specimens for a composition of matter, are required by law, before a patent can issue; by sending a model or specimens to the subscriber, with a short statement of the object of the invention, the necessary papers and drawings will be prepared and forwarded to the applicant for execution, thereby obviating the expense consequent upon a journey to Washington, or delay in issuing the patent.

Being well acquainted with the patent laws of the United States, England and France, and the decisions of the courts in patent cases, he tenders his services where information is required in reference to infringements of patents, or defence against suits for infringement, such as compiling and arranging evidence, &c.

To individuals and companies wishing to procure drawings and estimates of machinery, or buildings, for manufactories, on the most modern and improved plans, or any other matter connected with mechanical engineering, he will furnish information; and, should it be required, will locate and superintend structures of this description.

Wishing to be generally useful to mechanics and inventors, he will attend to the sale of machinery and patent rights; thus, being a place of resort from all parts of the Union, is perhaps the best location for such a purpose.

Papers relating to patents can be sent to the commissioner of patents, when voluminous, free of postage, and models sent to the collectors of the principal ports, will also come free of expense, and the subscriber can be advised thereof by letter, which in all cases must be post paid. All applications for information relating to patents must be accompanied by a fee of five dollars; charges for other business transactions will be made according to their magnitude. J. JAMES GREENOUGH.

Certificate of HON. H. L. ELLSWORTH, *Commissioner of Patents.*
PATENT OFFICE, Nov. 29th, 1842.

Mr. *J. J. Greenough*, who has for some years been employed in the patent office, in a highly responsible situation, under the act of 1836, restoring the records, having to my regret tendered his resignation, I take great pleasure in recommending him as a gentleman worthy of confidence, and as being particularly qualified to take charge of any business requiring a knowledge of mechanical science, the progress of the arts, and patent improvements. Mr. Greenough is also well acquainted with the practice of this office. HENRY L. ELLSWORTH.

REFERENCES.—Hon. S. Prentiss, of *Vt.*, U. S. Senate; Hon. J. P. Kennedy, of *Md.*, U. S. House of Reps; Hon John C. Clark, of *N. Y.*, U. S. House of Reps; Hon W. Cranch, *Chief Justice, D. C.*; J. W. Hand, Esq., *Chief Clerk, Patent Office*, C. M. Keeler, Esq., *Examiner, Patent Office.*

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Mechanics out of employment may find it a paying business to solicit subscribers for this paper in their vicinities and among their friends. Applications, post paid, directed to this office will meet with attention; they should be accompanied by certificates of character and responsibility.

The following local agents are authorized to receive subscriptions and money for this paper.

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